

Please delete the Abstract on page 7 in toto and replace with the following new Abstract:

Abstract

A leak detector operating according to the counterflow principle comprises a first high vacuum pump that operates in series with a primary pump. A second high vacuum pump is branched at a connecting point and an entry side thereof is connected to a mass spectrometer. A light test gas in the form of helium flows through the second high vacuum pump in a direction opposite to a transport direction. A conduit connecting an inlet to the entry side of the first high vacuum pump is devoid of restricted flow zones and valves in such a way that the pumping capacity of the leak detector is high for helium, thereby reducing the response time thereof. A valve for blocking the conduit leading via the first high vacuum pump is arranged between the exit side thereof and the entry side of the primary pump.